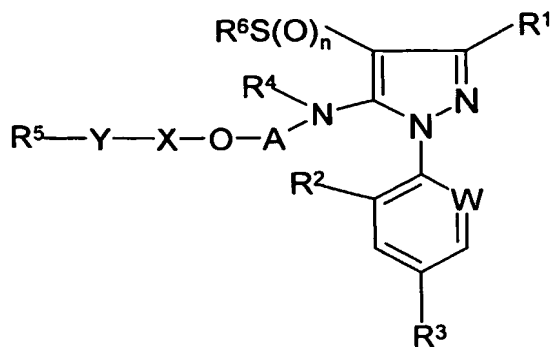


## CLAIMS

1. A compound of formula (I):



(I)

wherein:

$R^1$  is CN,  $CSNH_2$  or  $C(=N-Z)-S(O)_r-Q$ ;

$Z$  is H,  $(C_1-C_6)$ -alkyl,  $(C_1-C_6)$ -haloalkyl,  $(C_3-C_6)$ -alkenyl,  $(C_3-C_6)$ -alkynyl,  $-(CH_2)_qR^7$ ,

10  $COR^8$ ,  $CO_2-(C_1-C_6)$ -alkyl or  $S(O)_pR^8$ ;

$Q$  is  $(C_1-C_6)$ -alkyl or  $CH_2R^7$ ;

$W$  is C-halogen, C- $CH_3$  or N;

$R^2$  is hydrogen, halogen or  $CH_3$ ;

$R^3$  is  $(C_1-C_3)$ -haloalkyl,  $(C_1-C_3)$ -haloalkoxy or  $SF_5$ ;

15  $R^4$  is hydrogen,  $(C_2-C_6)$ -alkenyl,  $(C_2-C_6)$ -haloalkenyl,  $(C_2-C_6)$ -alkynyl,  $(C_2-C_6)$ -haloalkynyl,  $(C_3-C_7)$ -cycloalkyl,  $(C_3-C_7)$ -cycloalkyl- $(C_1-C_6)$ -alkyl,  $CO_2-(C_1-C_6)$ -alkyl,  $CO_2-(C_3-C_6)$ -alkenyl,  $CO_2-(C_3-C_6)$ -alkynyl,  $CO_2-(CH_2)_mR^7$  or  $SO_2R^8$ ; or  $(C_1-C_6)$ -alkyl unsubstituted or substituted by one or more radicals selected from the group consisting of halogen,  $(C_1-C_6)$ -alkoxy,  $(C_1-C_6)$ -haloalkoxy,  $(C_3-C_6)$ -alkenyloxy,  $(C_3-C_6)$ -haloalkenyloxy,  $(C_3-C_6)$ -alkynyloxy,  $(C_3-C_6)$ -haloalkynyloxy,  $(C_3-C_7)$ -cycloalkyl,  $S(O)_pR^8$ , CN,  $NO_2$ , OH,  $COR^9$ ,  $NR^9R^{10}$ ,  $S(O)_pR^7$ ,  $OR^7$  and  $CO_2R^9$ ;

$A$  is  $(C_1-C_6)$ -alkylene or  $(C_1-C_6)$ -haloalkylene;

$X$  is  $C(=O)$ ,  $C(=S)$  or  $SO_2$ ;

$Y$  is O,  $NR^{11}$  or a covalent bond;

25  $R^5$  is  $(C_3-C_6)$ -alkenyl,  $(C_3-C_6)$ -haloalkenyl,  $(C_3-C_6)$ -alkynyl,  $(C_3-C_6)$ -haloalkynyl,  $(C_3-C_7)$ -cycloalkyl,  $(C_3-C_7)$ -cycloalkyl- $(C_1-C_6)$ -alkyl,  $-(CH_2)_qR^7$  or  $-(CH_2)_qR^{12}$ ; or is  $(C_1-$

C<sub>6</sub>)-alkyl unsubstituted or substituted by one or more radicals selected from the group consisting of halogen, (C<sub>1</sub>-C<sub>6</sub>)-alkoxy, (C<sub>1</sub>-C<sub>6</sub>)-haloalkoxy, (C<sub>3</sub>-C<sub>6</sub>)-alkenyloxy, (C<sub>3</sub>-C<sub>6</sub>)-haloalkenyloxy, (C<sub>3</sub>-C<sub>6</sub>)-alkynyloxy, (C<sub>3</sub>-C<sub>6</sub>)-haloalkynyloxy, (C<sub>3</sub>-C<sub>7</sub>)-cycloalkyl, S(O)<sub>p</sub>R<sup>8</sup>, CN, NO<sub>2</sub>, OH, COR<sup>9</sup>, NR<sup>9</sup>R<sup>10</sup>, S(O)<sub>p</sub>R<sup>7</sup>, OR<sup>7</sup> and CO<sub>2</sub>R<sup>9</sup>;

5 R<sup>6</sup> is (C<sub>1</sub>-C<sub>6</sub>)-alkyl, (C<sub>1</sub>-C<sub>6</sub>)-haloalkyl, (C<sub>2</sub>-C<sub>6</sub>)-alkenyl, (C<sub>2</sub>-C<sub>6</sub>)-haloalkenyl, (C<sub>2</sub>-C<sub>6</sub>)-alkynyl or (C<sub>2</sub>-C<sub>6</sub>)-haloalkynyl;

R<sup>7</sup> is phenyl unsubstituted or substituted by one or more radicals selected from the group consisting of halogen, (C<sub>1</sub>-C<sub>6</sub>)-alkyl, (C<sub>1</sub>-C<sub>6</sub>)-haloalkyl, (C<sub>1</sub>-C<sub>6</sub>)-alkoxy, (C<sub>1</sub>-C<sub>6</sub>)-haloalkoxy, CN, NO<sub>2</sub>, S(O)<sub>p</sub>R<sup>8</sup>, COR<sup>10</sup>, COR<sup>13</sup>, CONR<sup>9</sup>R<sup>10</sup>, SO<sub>2</sub>NR<sup>9</sup>R<sup>10</sup>, NR<sup>9</sup>R<sup>10</sup> and OH;

R<sup>8</sup> is (C<sub>1</sub>-C<sub>6</sub>)-alkyl or (C<sub>1</sub>-C<sub>6</sub>)-haloalkyl;

R<sup>9</sup> and R<sup>10</sup> are each independently H, (C<sub>1</sub>-C<sub>6</sub>)-alkyl, (C<sub>1</sub>-C<sub>6</sub>)-haloalkyl, (C<sub>3</sub>-C<sub>6</sub>)-alkenyl, (C<sub>3</sub>-C<sub>6</sub>)-haloalkenyl, (C<sub>3</sub>-C<sub>6</sub>)-alkynyl, (C<sub>3</sub>-C<sub>6</sub>)-cycloalkyl or -(C<sub>1</sub>-C<sub>6</sub>)-alkyl-(C<sub>3</sub>-C<sub>6</sub>)-cycloalkyl; or

15 R<sup>9</sup> and R<sup>10</sup> together with the attached N atom form a five- or six-membered saturated ring which optionally contains an additional hetero atom in the ring which is selected from O, S and N, the ring being unsubstituted or substituted by one or more radicals selected from the group consisting of halogen, (C<sub>1</sub>-C<sub>6</sub>)-alkyl and (C<sub>1</sub>-C<sub>6</sub>)-haloalkyl;

20 R<sup>11</sup> is H, (C<sub>1</sub>-C<sub>6</sub>)-alkyl, (C<sub>1</sub>-C<sub>6</sub>)-haloalkyl, (C<sub>3</sub>-C<sub>6</sub>)-alkenyl or (C<sub>3</sub>-C<sub>6</sub>)-alkynyl;

R<sup>12</sup> is heterocyclyl unsubstituted or substituted by one or more radicals selected from the group consisting of halogen, (C<sub>1</sub>-C<sub>4</sub>)-alkyl, (C<sub>1</sub>-C<sub>4</sub>)-haloalkyl, (C<sub>1</sub>-C<sub>4</sub>)-alkoxy, (C<sub>1</sub>-C<sub>4</sub>)-haloalkoxy, NO<sub>2</sub>, CN, CO<sub>2</sub>(C<sub>1</sub>-C<sub>6</sub>)-alkyl, S(O)<sub>p</sub>R<sup>8</sup>, OH and oxo;

25 R<sup>13</sup> is phenyl unsubstituted or substituted by one or more radicals selected from the group consisting of halogen, (C<sub>1</sub>-C<sub>6</sub>)-alkyl, (C<sub>1</sub>-C<sub>6</sub>)-haloalkyl, (C<sub>1</sub>-C<sub>6</sub>)-alkoxy, (C<sub>1</sub>-C<sub>6</sub>)-haloalkoxy, CN, NO<sub>2</sub>, S(O)<sub>p</sub>R<sup>8</sup> and NR<sup>9</sup>R<sup>10</sup>;

n, p and r are each independently zero, one or two;

m and q are each independently zero or one; and

30 each heterocyclyl in the above-mentioned radicals is independently a heterocyclic radical having 3 to 7 ring atoms and 1, 2 or 3 hetero atoms in the ring selected from the group consisting of N, O and S;

or a pesticidally acceptable salt thereof.

2. A compound or a salt thereof as claimed in claim 1 wherein R<sup>1</sup> is CN or CSNH<sub>2</sub>.

5 3. A compound or a salt thereof as claimed in claim 1 or 2 wherein R<sup>6</sup> is CF<sub>3</sub>.

4. A compound or a salt thereof as claimed in claim 1, 2 or 3 wherein R<sup>1</sup> is CN, CSNH<sub>2</sub> or C(=N-Z)-S-Q;

Z is H, (C<sub>1</sub>-C<sub>3</sub>)-alkyl, -(CH<sub>2</sub>)<sub>q</sub>R<sup>7</sup>, COR<sup>8</sup>, CO<sub>2</sub>-(C<sub>1</sub>-C<sub>3</sub>)-alkyl or S(O)<sub>p</sub>R<sup>8</sup>;

10 Q is (C<sub>1</sub>-C<sub>3</sub>)-alkyl;

W is C-Cl;

R<sup>2</sup> is Cl;

R<sup>3</sup> is CF<sub>3</sub>;

R<sup>4</sup> is hydrogen, (C<sub>2</sub>-C<sub>4</sub>)-alkenyl, (C<sub>2</sub>-C<sub>4</sub>)-alkynyl, (C<sub>3</sub>-C<sub>7</sub>)-cycloalkyl, CO<sub>2</sub>-(C<sub>1</sub>-C<sub>4</sub>)-alkyl, CO<sub>2</sub>-(C<sub>3</sub>-C<sub>4</sub>)-alkenyl, CO<sub>2</sub>-(C<sub>3</sub>-C<sub>4</sub>)-alkynyl, CO<sub>2</sub>-(CH<sub>2</sub>)<sub>m</sub>R<sup>7</sup> or SO<sub>2</sub>R<sup>8</sup>; or  
15 (C<sub>1</sub>-C<sub>3</sub>)-alkyl unsubstituted or substituted by one or more radicals selected from the group consisting of halogen, (C<sub>1</sub>-C<sub>3</sub>)-alkoxy, S(O)<sub>p</sub>R<sup>8</sup> and CO<sub>2</sub>-(C<sub>1</sub>-C<sub>3</sub>)-alkyl);

A is -CH<sub>2</sub>CH<sub>2</sub>- or -CH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>-;

X is C(=O) or SO<sub>2</sub>;

20 Y is O, NH or a covalent bond;

R<sup>5</sup> is (C<sub>3</sub>-C<sub>4</sub>)-alkenyl, (C<sub>3</sub>-C<sub>4</sub>)-alkynyl, -(CH<sub>2</sub>)<sub>q</sub>R<sup>7</sup>, (C<sub>1</sub>-C<sub>3</sub>)-alkyl or (C<sub>1</sub>-C<sub>3</sub>)-haloalkyl;

R<sup>6</sup> is CF<sub>3</sub>;

each R<sup>7</sup> is independently phenyl unsubstituted or substituted by one or more radicals selected from the group consisting of halogen, (C<sub>1</sub>-C<sub>3</sub>)-alkyl, (C<sub>1</sub>-C<sub>3</sub>)-

25 haloalkyl, (C<sub>1</sub>-C<sub>3</sub>)-alkoxy, (C<sub>1</sub>-C<sub>3</sub>)-haloalkoxy, CN, NO<sub>2</sub> and S(O)<sub>p</sub>R<sup>8</sup>; and

each R<sup>8</sup> is independently (C<sub>1</sub>-C<sub>3</sub>)-alkyl or (C<sub>1</sub>-C<sub>3</sub>)-haloalkyl.

5. A compound or a salt thereof as claimed in any one of claims 1 to 4 wherein R<sup>1</sup> is CN or CSNH<sub>2</sub>;

30 W is C-Cl;

R<sup>2</sup> is Cl;

R<sup>3</sup> is CF<sub>3</sub>;

$R^4$  is  $(C_1-C_3)$ -alkyl;

A is  $-CH_2CH_2-$  or  $-CH_2CH_2CH_2-$ ;

X is  $C(=O)$ ;

Y is O, NH or a covalent bond;

5  $R^5$  is  $(C_3-C_4)$ -alkenyl,  $(C_3-C_4)$ -alkynyl,  $-(CH_2)_qR^7$ ,  $(C_1-C_3)$ -alkyl or  $(C_1-C_3)$ -haloalkyl;

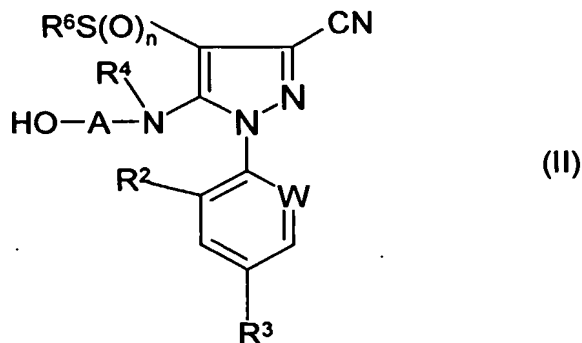
$R^6$  is  $CF_3$ ;

$R^7$  is phenyl unsubstituted or substituted by one or more radicals selected from the group consisting of halogen,  $(C_1-C_3)$ -alkyl,  $(C_1-C_3)$ -haloalkyl,  $(C_1-C_3)$ -alkoxy,  $(C_1-C_3)$ -haloalkoxy, CN,  $NO_2$  and  $S(O)_pR^8$ ; and

10  $R^8$  is  $(C_1-C_3)$ -alkyl or  $(C_1-C_3)$ -haloalkyl.

6. A process for the preparation of a compound of formula (I) or a salt thereof as defined in any one of claims 1 to 5, which process comprises:

a) where  $R^2$ ,  $R^3$ ,  $R^4$ ,  $R^5$ ,  $R^6$ , W, A and n are as defined in claim 1,  $R^1$  is CN, and  
15 Y and X are as defined in claim 1 with the exclusion of compounds in which  $-Y-X-$  is  $-NH-CO-$  or  $-NH-CS-$ , acylating or sulfonylating a compound of formula (II):



wherein  $R^2$ ,  $R^3$ ,  $R^4$ ,  $R^6$ , W, A and n are as defined in formula (I), with a compound of formula (III):



20

wherein Y and X are as defined in formula (I) with the exclusion of compounds in which  $-Y-X-$  is  $-NH-CO-$  or  $-NH-CS-$ , and L is a leaving group; or

b) where  $R^1$  is CN, and  $R^2$ ,  $R^3$ ,  $R^4$ ,  $R^5$ ,  $R^6$ , W, A and n are as defined in claim 1, reacting a compound of formula (II) wherein  $R^1$ ,  $R^2$ ,  $R^3$ ,  $R^6$ , W, A and n are as  
25 defined in claim 1 and  $-Y-X-$  is  $-NH-CO-$  or  $-NH-CS-$ , with an isocyanate or isothiocyanate compound of formula (IV) or (V):



wherein  $R^5$  is as defined in formula(I); or

- 5 c) where  $R^1$  is CN, n is 1 or 2, and  $R^2, R^3, R^4, R^5, R^6, W, A, X$  and  $Y$  are as defined in claim 1, oxidising a corresponding compound in which n is 0 or 1; or
- d) where  $R^1$  is  $CSNH_2$ , and  $R^2, R^3, R^4, R^5, R^6, W, A, X, Y$  and n are as defined in claim 1, reacting the corresponding compound of formula (I) wherein  $R^1$  is CN, with an alkali or alkaline earth metal hydrosulfide, or with the reagent  $Ph_2PS_2$ ; or
- 10 (e) where  $R^1$  is  $CSNH_2$ , and  $R^2, R^3, R^4, R^5, R^6, W, A, X, Y$  and n are as defined in claim 1, reacting the corresponding compound of formula (I) wherein  $R^1$  is CN, with a bis(trialkylsilyl)sulfide, in the presence of a base; or
- (f) where  $R^1$  is  $C(=N-H)-S-Q$ , and  $Q, R^2, R^3, R^4, R^5, R^6, W, A, X, Y$  and n are as defined in claim 1, reacting the corresponding compound of formula (I) wherein  $R^1$
- 15 is  $CSNH_2$  with an alkylating agent of formula (VI) or (VII):



wherein  $Q$  is as defined in formula (I) and  $L^1$  is a leaving group; or

- (g) where  $R^1$  is  $C(=N-Z)-S-Q$ ,  $Z$  is as defined in claim 1 with the exclusion of H, and the other values are as defined in formula (I), alkylating, acylating or
- 20 sulfonylating the corresponding compound of formula (I) wherein  $Z$  is H, with a compound of formula (VIII):



wherein  $Z$  is as defined in formula (I) with the exclusion of H, and  $L^2$  is a leaving group; and

- 25 (h) if desired, converting a resulting compound of formula (I) into a pesticidally acceptable salt thereof.

7. A pesticidal composition comprising a compound of formula (I) or a pesticidally acceptable salt thereof as defined in any one of claims 1 to 5, in
- 30 association with a pesticidally acceptable diluent or carrier and/or surface active agent.

8. The use of a compound of formula (I) or a salt thereof according to any one of claims 1 to 5 or of a composition according to claim 7, for the preparation of a veterinary medicament.

5 9. The use of a compound of formula (I) or a salt thereof according to any one of claims 1 to 5 or of a composition according to claim 7, for the control of pests.

10. A method for controlling pests at a locus which comprises applying thereto an effective amount of a compound of formula (I) or a salt thereof as claimed in any  
10 one of claims 1 to 5 or of a composition according to claim 7.